

This listing of claims will replace all prior versions, and listings, of claims in the application.

### **Listing of Claims**

1. (Currently Amended) A method of calibrating an unique proportional solenoid of an unique member of a predesigned class of electrohydraulic control system systems that is inclusive of at least one valve controlled by a proportional solenoid that provides an output response in response to an input current, said method comprising:
  - identifying a characteristic equation of the proportional solenoid in the electrohydraulic system, said characteristic equation including a plurality of coefficients;
  - imbedding into a control unit for said electrohydraulic control system characteristic equation the;
  - coupling the electrohydraulic system to a test stand;
  - applying a plurality of different currents to the unique solenoid of the electrohydraulic system;
  - measuring the output response of the unique electrohydraulic system for each of the plurality of currents;
  - identifying [[the]] unique coefficients in the characteristic equation from the output response measurements; and
  - flashing the coefficients in a memory of the control unit.
2. (Original) The method according to claim 1 wherein identifying the coefficients in the characteristic equation from the output response measurements includes employing a curve fitting function.
3. (Original) The method according to claim 2 wherein identifying the coefficients in the characteristic equation from the output response measurements includes employing a least squares fitting function.
4. (Cancelled)

5. (Original) The method according to claim 1 further comprising hard-coding the characteristic equation into control software.

6. (Cancelled)

7. (Original) The method according to claim 1 wherein the electrohydraulic system is employed in an automatic transmission.

8. (Original) The method according to claim 7 wherein the electrohydraulic system is employed in a pressure regulation system or a flow regulation system used for controlling functions in the automatic transmission.

9. (Original) The method according to claim 1 wherein the electrohydraulic system includes an integrated transmission control unit (TCU).

10. (Original) The method according to claim 1 wherein the output response is selected from the group consisting of pressure and fluid flow.

11. (Canceled)

12. (Currently Amended) A method of calibrating an unique proportional solenoid of an unique member of a predesigned class of electrohydraulic system systems employed in ~~[[an]]~~ automatic ~~transmission~~ transmissions, said electrohydraulic system providing an output response in response to an input current, wherein the electrohydraulic system includes a proportional solenoid, a hydraulic valve, and solenoid drive electronics, said method comprising:

identifying a characteristic equation of the electrohydraulic system, said characteristic equation including a plurality of coefficients;

imbedding the characteristic equation into a control unit for the transmission;

coupling the electrohydraulic system to a test stand;

applying a plurality of currents to the solenoid controlling the valve;

measuring the output response of the electrohydraulic system for each current;

identifying the unique coefficients of the characteristic equation from the output response measurements, wherein identifying the coefficients in the characteristic equation from the output response measurements includes employing a curve fitting function; and

storing the coefficients in an on-board memory of the control unit.

13. (Original) The method according to claim 12 wherein the electrohydraulic system is employed in a pressure regulation system or a flow regulation system used for controlling functions in the automatic transmission.

14. (Original) The method according to claim 12 wherein identifying the coefficients in the characteristic equation from the output response measurements includes employing a least squares fitting function.

15. (Original) The method according to claim 12 wherein the output response is selected from the group consisting of pressure and fluid flow.

16. (Cancelled)

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)